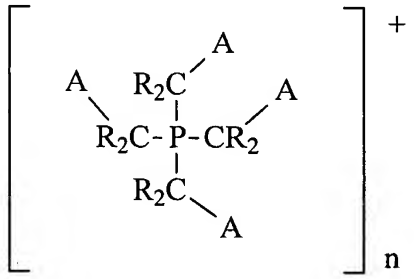
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

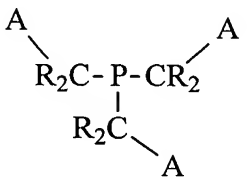
Listing of Claims:

1-42 (Canceled)

43. (New) A method for controlling the growth of bacterial biomass in an aqueous system comprising adding to, or contacting with, the aqueous system an effective amount of an uncoupling agent which is a water-soluble biocide comprising an alkyl substituted phosphonium compound of formula (I) or an alkyl substituted phosphine of formula an alkyl-substituted phosphine of formula (II) and a condensate of formula (III):



X^{m-}



(I) (II)

$$(AR_2CR^1{}_vP[R''PR^1{}_v]_k\text{-}CR_2A)^{x+}\ \frac{x}{y}\ [X]^{y-}$$

(III)

wherein:

X is an anion;

n is the valency of X represented by m;

each A can be the same or different and is selected from OH, OR, SO_3R, PO_3R_2, COOH, COOR, SO_3H, PO_3H_2, CH_2COOH, substituted alkyl, aryl and substituted amino groups;

each R, and each R in each A group, is independently selected from hydrogen, a C_1 to C_{20} alkyl, aryl, substituted alkyl or aryl, carboxy or carboxy ester; wherein each CR_2 group may be the same or different, and

R'' is a divalent hydrocarbon radical having from 2-20 carbon atoms and is optionally substituted with one or more substituents selected from the group consisting of halogen, hydroxy, carboxy, amino, alkylamino, or $PR^1_mCH_2OH$ groups or interrupted by one or more ether or carbonyl linkages;

each R^1 is independently a monovalent hydrocarbon radical having from 1 to 25 carbon atoms and optionally substituted with one or more substituents selected from the group consisting of halogen, hydroxy, carboxy, amino, alkylamino, or $PR^1_mCH_2OH$ groups or interrupted by one or more ether or carbonyl linkages, and in formula (III) each v is 1 or 2, k is from 0 to 10 (e.g. from 1 to 10), x is the number of groups in the molecule having v=2 and X is a compatible anion of valency y such that the compound is water-soluble.

44. (New) The method as claimed in claim 43, wherein X is selected from the group consisting of chloride, sulphate, phosphate, acetate and bromide.

45. (New) The method as claimed in claim 43, wherein the alkyl-substituted phosphonium compound is tetrakis (hydroxymethyl) phosphonium sulphate.

46. (New) The method as claimed in claim 43, wherein the alkyl-substituted phosphonium compound is selected from a group consisting of tetrakis (hydroxymethyl) phosphonium chloride, tetrakis (hydroxymethyl) phosphonium bromide, tetrakis (hydroxymethyl) phosphonium acetate and tetrakis (hydroxymethyl) phosphonium phosphate.

47. (New) The method as claimed in claim 43, wherein the condensate is a condensate of tris(hydroxyorgano)phosphine with a nitrogen containing compound.

48. (New) The method as claimed in claim 47, wherein the nitrogen containing compound is selected from the group consisting of a C_{1-20} alkylamine, dicyandiamide, thiourea and guanidine.

49. (New) The method as claimed in claim 43, wherein the method comprises the step of contacting an effective amount of a water-soluble biocide directly with the bacterial biomass.

50. (New) The method as claimed in claim 49, wherein the effective amount of the water-soluble biocide added to the aqueous system is up to 5000 mg/l, optionally is up to 1000 mg/l.

51. (New) The method as claimed in claim 49, wherein the effective amount of the water-soluble biocide added to the aqueous system is from 0.005 mg/l to 500 mg/l, optionally from 0.01 mg/l to 300 mg/l.

52. (New) The method as claimed in claim 51, wherein the effective amount of the water-soluble biocide added to the aqueous system is from 0.05 mg/l to 100 mg/l, optionally from 0.1 mg/l to 10mg/l.

53. (New) The method as claimed in claim 52, wherein the effective amount of the water-soluble biocide added to the aqueous system is from 0.5 mg/l to 7.5mg/l, optionally from 1mg/l to 5mg/l.

54. (New) The method as claimed in claim 43, wherein the effective amount of the water-soluble biocide added to the aqueous system is from 0.1 mg to 10000mg per gram, optionally from 0.5 mg to 1000mg per gram of sludge solids in the aqueous system.

55. (New) The method as claimed in claim 54, wherein the effective amount of the water-soluble biocide added to the aqueous system is from 1 mg to 500mg per gram, optionally from 5mg to 100mg per gram of sludge solids in the aqueous system.

56. (New) The method as claimed in claim 43, wherein the uncoupling agent comprises a compound selected from the group consisting of quaternary ammonium compounds; polymeric quaternary ammonium compounds; polymeric biguanide hydrochlorides; tris(hydroxymethyl)nitromethane; 4,4-dimethylozazolidine; phenoxypropanol; phenoxyethanol; glyoxal; acrolein; aldehydes; triazines; quaternary phosphonium compounds; 2-bromo-4-hydroxyacetophenone; carbamates; tertbuthylazine; tetrachloro-2,4,6-cyano-3-benzonitrile; thiazole and isothiazole derivatives; compounds with activated halogen groups; bis chloromethyl sulphone, and methylene bis thiocyanate.

57. (New) The method as claimed in claim 43, wherein the water-soluble biocide is formulated with one or more of a surfactant; an antifoam; a scale inhibitor; a corrosion inhibitor; a biocide, a flocculant, a dewatering aid and a dispersant.

58. (New) The method as claimed in claim 43, wherein the aqueous system is a wastewater treatment plant used for the treatment of industrial or municipal effluent.